

B. REMARKS

The Examiner is thanked for the performance of a thorough search. By this amendment, Claims 9, 16, 47 and 54 have been canceled and Claims 1, 10, 15, 17, 18, 39, 48, 53, 55 and 56 have been amended. Hence, Claims 1-8, 10-15, 17-46, 48-53 and 55-68 are pending in this application. The amendments to the claims do not add any new matter to this application. All issues raised in the Office Action mailed August 18, 2005 are addressed hereinafter.

ALLOWABILITY OF CLAIMS

The indicated allowability of Claims 9-12, 16-20, 47-50 and 54-58 is gratefully acknowledged. These claims have been rewritten in independent form as follows:

Independent Claim 1 has been amended to include all of the limitations of allowable Claim 9 and Claim 9 has been canceled.

Independent Claim 15 has been amended to include all of the limitations of allowable dependent Claim 16 and Claim 16 has been canceled.

Independent Claim 39 has been amended to include all of the limitations of allowable Claim 47 and Claim 47 has been canceled.

Independent Claim 53 has been amended to include all of the limitations of allowable dependent Claim 54 and Claim 43 has been canceled.

REJECTION OF CLAIMS 1-8, 15, 39-46 AND 51-53 UNDER 35 U.S.C. § 102(e)

Claims 1-8, 15, 39-46 and 51-53 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Wang et al.*, U.S. Patent No. 6,704,367 (hereinafter "*Wang*"). It is respectfully submitted that Claims 1-8, 15, 39-46 and 51-53, as amended, are patentable over *Wang* for at least the reasons provided hereinafter.

Independent Claim 1 has been amended to include all of the limitations of allowable dependent Claim 9. Claims 2-8 all depend from Claim 1 and include all of the limitations of Claim 1.

Independent Claim 15 has been amended to include all of the limitations of allowable dependent Claim 16.

Independent Claim 39 has been amended to include all of the limitations of allowable dependent Claim 47. Claims 40-46, 51 and 52 all depend from Claim 39 and include all of the limitations of Claim 1.

Independent Claim 53 has been amended to include all of the limitations of allowable dependent Claim 54.

In view of the foregoing amendments, it is respectfully submitted that Claims 1-8, 15, 39-46 and 51-53 are patentable over *Wang*. Accordingly, reconsideration and withdrawal of the rejection of Claims 1-8, 15, 39-46 and 51-53 under 35 U.S.C. § 102(e) as being anticipated by *Wang* is respectfully requested.

REJECTION OF CLAIMS 13, 14, 21-30, 31-38, 59-62 AND 63-68 UNDER 35 U.S.C. § 103(a)

Claims 13, 14, 21-30, 31-38, 59-62 and 63-68 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Wang* in view of *Sankaranarayanan et al.*, U.S. Patent No. 6,134,274 (hereinafter “*Sankaranarayanan*”). It is respectfully submitted that Claims 13, 14, 21-30, 31-38, 59-62 and 63-68 are patentable over *Wang* and *Sankaranarayanan*, alone or in combination, for at least the reasons provided hereinafter.

CLAIMS 13 AND 14

Claims 13 and 14 depend from Claim 1 and include all of the limitations of Claim 1. As previously set forth herein, Claim 1 has been amended to include all of the limitations of allowable dependent Claim 9.

CLAIM 21

Claim 21 recites “[a] method for assigning gain values to a plurality of channels in a discrete multi-tone modulation communications system, the method comprising assigning, to each channel in the plurality of channels, a gain value based upon a performance characteristic for each channel in the plurality of channels.” The approach recited in Claim 21 requires assigning a gain value to each channel based upon a performance characteristic for each channel. It is respectfully submitted that this aspect of Claim 21 is not taught or suggested by *Wang* or *Sankaranarayanan*. The office action stated that this aspect of Claim 21 is not taught or suggested by *Wang* and relied upon *Sankaranarayanan* for this limitation. Specifically, the Office Action referred to the text at Col. 4, lines 15-32 of *Sankaranarayanan*. This portion of *Sankaranarayanan* describes that the allocation of bits to tones may be made based upon various constraints that may include the maximum power to be transmitted in each bin and a total power constraint. Thus, this portion of *Sankaranarayanan* addresses how bits are allocated to tones. There is, however, no mention or suggestion of using a performance characteristic for each channel to assign a gain value to each channel, as recited in Claim 21. It is therefore respectfully submitted that Claim 21 includes one or more limitations that are not taught or suggested by *Wang* and *Sankaranarayanan*, considered alone or in combination.

CLAIMS 22-24

Claims 22-24 depend from Claim 21 and include all of the limitations of Claim 21. It is therefore respectfully submitted that Claims 22-24 are patentable for at least the reasons set forth herein with respect to Claim 21.

CLAIMS 25-30

Claims 25-30 each recite the limitation “assigning to the one or more channels a gain value based on the performance characteristic of each of the one or more channels” which is very similar to the limitation “assigning, to each channel in the plurality of channels, a gain value based upon a performance characteristic for each channel in the plurality of channels” discussed herein with respect to Claim 21. It is therefore respectfully submitted that Claims 25-30 are patentable for at least the reasons set forth herein with respect to Claim 21.

CLAIMS 31-38

Claims 31-38 each recite the limitation “a gain value module communicatively configured to assign to each of the one or more channels a fine gain value based on the performance characteristic of each of the one or more channels.” As discussed herein with respect to Claim 21, *Wang* and *Sankaranarayanan* do not teach or suggest assigning a gain value to each channel based upon a performance characteristic for each channel. It is therefore respectfully submitted that Claims 31-38 each include one or more limitations that are not taught or suggested by *Wang* and *Sankaranarayanan* and are therefore patentable over *Wang* and *Sankaranarayanan*.

CLAIMS 59-62

Claims 59-62 recite limitations similar to Claims 21-24, except in the context of computer-readable media. It is therefore respectfully submitted that Claims 59-62 are patentable for at least the reasons set forth herein with respect to Claim 21.

CLAIMS 63-68

Claims 63-68 recite limitations similar to Claims 25-30, except in the context of computer-readable media. It is therefore respectfully submitted that Claims 63-68 are patentable for at least the reasons set forth herein with respect to Claims 25-30.

In view of the foregoing, it is respectfully submitted that Claims 13, 14, 21-30, 31-38, 59-62 and 63-68 each include one or more limitations that are not taught or suggested by *Wang* and *Sankaranarayanan*, considered alone or in combination, and are therefore patentable over *Wang* and *Sankaranarayanan*. Accordingly, reconsideration and withdrawal of the rejection of Claims 13, 14, 21-30, 31-38, 59-62 and 63-68 under 35 U.S.C. § 103(a) as being unpatentable over *Wang* in view of *Sankaranarayanan* is respectfully requested.

CONCLUSION

It is respectfully submitted that all of the pending claims are in condition for allowance and the issuance of a notice of allowance is respectfully requested. If there are any additional charges, please charge them to Deposit Account No. 50-1302.

The Examiner is invited to contact the undersigned by telephone if the Examiner believes that such contact would be helpful in furthering the prosecution of this application.

Respectfully submitted,

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CERTIFICATE OF MAILING

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on September 30, 2005

by



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